REMARKS / ARGUMENTS

1. Response to 12/12/2007 Office Action

For the convenience of the Examiner and clarity of purpose, Assignee has reprinted the substance of the Office Action in ***10-point bolded and italicized font***. Assignee's arguments immediately follow in regular font.

> ***Claims 1, 3, 5, 7, 8, 10, 11, 14, 15, 19, and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Nagyszalancyzy et al (6048363). Nagyszalancyzy discloses a blood pump that uses a sensor to continuously monitor a pump parameter during systole and diastole. Nagyszalancyzy monitors/extracts the flow rate from the sensor signal to increase or decrease the pump speed based on the floe rate to achieve the proper pump operating point (e.g. columns 14-16, table 1, figures 22 and 23, etc.). Therefore Nagyszalancyzy will monitor/extract diastolic pump flow rate contribution below a mean flow rate and change the speed in response to the flow since he measures the flow rate all through diastole, both above and below the mean diastolic flow rate. For claims 14, 15, 19, and 20, Nagyszalancyzy describes (e.g. columns 13-15) the use of setting the predetermined speed in accordance with activities such as sleeping and the implantable pressure sensor. NOTE—the claims do not state that the mean flow rate is calculated based on the flow rate signal (or something similar) and that the predetermined speed is changed based on the calculated mean flow rate.***

Claim 1 recites "changing the predetermined speed in response to the diastolic pump flow rate" and has been amended to recite "the diastolic pump flow rate is ***an isolated*** flow contribution below a mean flow rate", emphasis added. Support for this amendment may be found in paragraph 36, which states:

> The VAD flow signal 252 is ac coupled to a precision rectifier 256 to remove the mean VAD flow rate component from the analog VAD flow signal 252. The systolic VAD flow rate 260 and diastolic VAD flow rate 261 are extracted separately. The isolated systolic and diastolic VAD flow signals 260,261 are then low-pass filtered 262 to yield respective average peak values of the systolic and diastolic VAD flow rates. As noted herein, a patient's peak diastolic VAD flow rate or average peak diastolic VAD flow rate increases during exercise and decreases at rest. Thus, peak diastolic VAD flow rate or the average peak diastolic VAD flow rate is applied to a voltage comparator 264 to compare

> the signal to a predetermined threshold 266 and provide the binary indication 254 of when the patient is exercising. The pump speed may then be adjusted accordingly.

In addition, figures 4-6 clearly show the diastolic flow rate being isolated from the other components of a composite flow rate. For example, figure 4 shows the diastolic flow rate isolated from both a mean flow rate and a systolic flow rate. As argued by the Office, each of these components would be part of a composite flow rate.

Nowhere does Nagyszalancyzy teach isolating a diastolic flow rate, much less changing a pump speed in response to any isolated diastolic flow rate, as claimed. Rather, Nagyszalancyzy merely teaches of a composite flow rate.

For at least this reason, Assignee respectfully submits that claim 1 is patentable over the disclosure and teaching of Nagyszalancyzy. Reconsideration and withdrawal of this rejection is requested. The arguments and amendments discussed herein concerning the patentability of claim 1 apply only to claim 1 and do not apply to other claims or to the same or similar words or phrases in other claims.

Claim 7 recites "***extract*** a diastolic pump flow rate from the blood flow rate signal", and "vary the speed of the pump in response to the diastolic pump flow rate", and "diastolic pump flow rate is a flow contribution below a mean flow rate", emphasis added.

Merriam-Webster's Online Dictionary, 10th Edition, defines "extract" as "to separate". The American Heritage® Dictionary of the English Language: Fourth Edition. 2000. defines "extract" as "[t]o remove for separate consideration". The Cambridge International Dictionary of English defines "extract" as "to remove or take out something". The Encarta® World English

Dictionary, North American Edition, defines "extract" as "pull something out". These definitions correspond with paragraph 36, quoted above, and figures 4-6.

As previously argued, Nagyszalancyzy simply does not "***extract*** a diastolic pump flow rate from the blood flow rate signal", emphasis added, as claimed in claim 7. While it is true that Nagyszalancyzy discusses a flow rate derived from a sensor signal, that flow rate is a composite of a total flow rate. Nowhere does Nagyszalancyzy teach extracting any portion of that flow rate, as the term "extract" is commonly understood and used in the specification.

For at least this reason, Assignee respectfully submits that claim 7 is patentable over the disclosure and teaching of Nagyszalancyzy. Reconsideration and withdrawal of this rejection is requested. The arguments and amendments discussed herein concerning the patentability of claim 7 apply only to claim 7 and do not apply to other claims or to the same or similar words or phrases in other claims.

2. New Claims 21-23

New claims 21-23 are presented herein to more particularly point out and distinctly claim certain aspects of the disclosed inventions.

3. CONCLUSION

Claim 1 has been amended. Claims 16-18 have been canceled, having been withdrawn as being directed to a non-elected invention. Claims 21-23 have been added. Thus, claims 1-15

and 19-23 are pending in this application. Assignee submits that each claim is patentable, as detailed herein. A notice of allowance is respectfully requested.

The Commissioner is authorized to charge to deposit account 12-1322/0021906.023US any other fees necessary to make this and related papers, if any, timely and effective.

Assignee thanks the Examiner for her consideration and effort on this file. If there are any questions or if additional information is needed, the Examiner is invited to telephone or email the undersigned.

Respectfully submitted,

LOCKE LORD BISSELL & LIDDELL LLP

By /David L. Terrell/
David L. Terrell
Reg. No. 50,576
Tel.: (713) 226-1495
dterrell@lockelord.com